

ABSTRACT

An infrared three-dimensional imaging system and method in which an object is irradiated by monochromatic radiation in the near-infrared or mid-infrared region of the spectrum. A spectral image is captured for each wavelength in a spectral range by a radiation detector to create a spectral image data block that is stored on a data storage device. The object is rotated by some predetermined angular increment until a complete three hundred and sixty degree view is obtained so that a spectral image data block is created for each angular position. Each spectral image data block is compressed to its most relevant spectral information and used to re-create a three dimensional image by a known computerized tomography algorithm.